

J. W. MEAKER, JR.  
 PRESSURE BINDER FOR LOOSE SHEETS.  
 APPLICATION FILED DEC. 30, 1907.

924,170.

Patented June 8, 1909.

Fig. 1

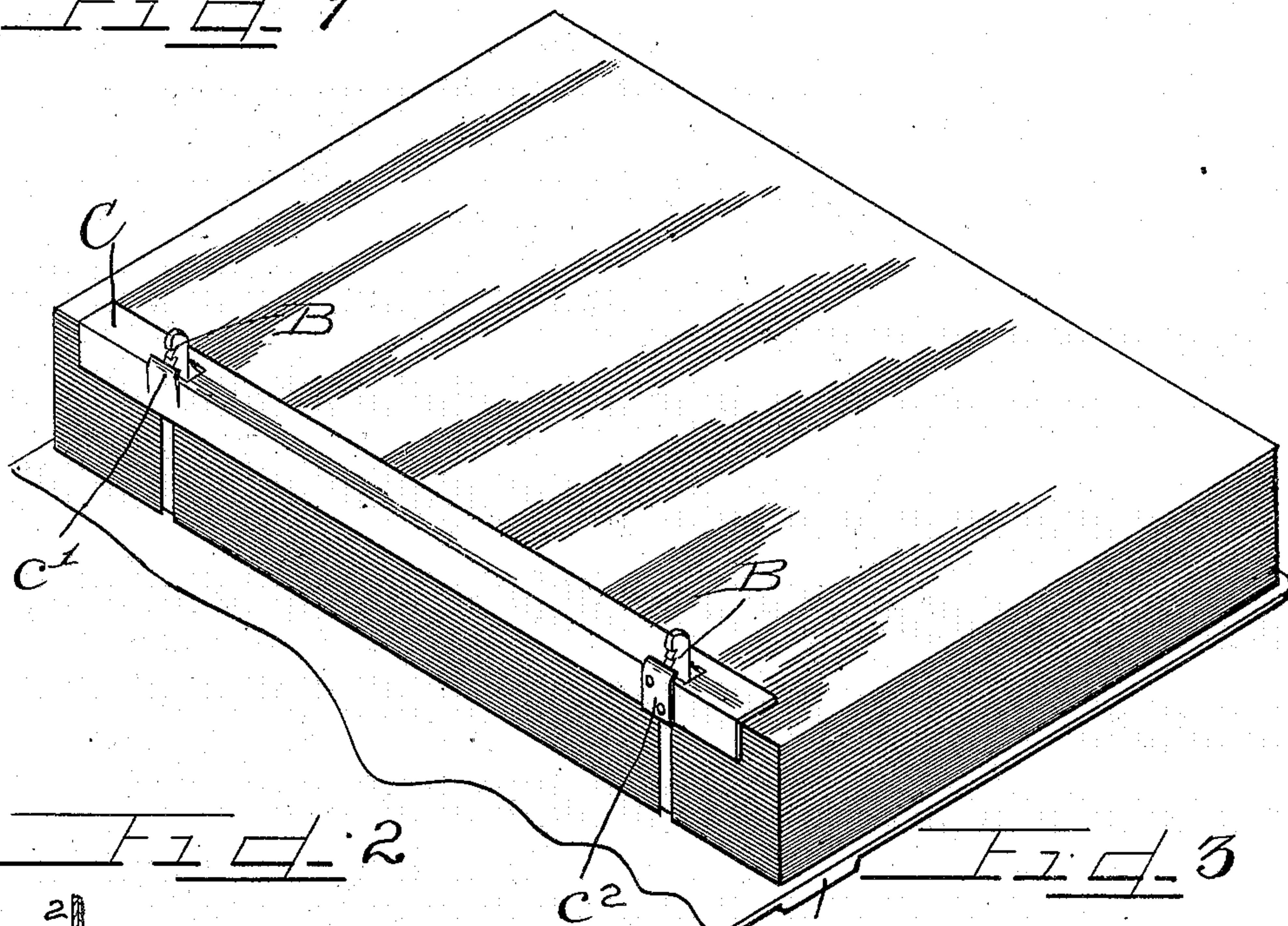


Fig. 2

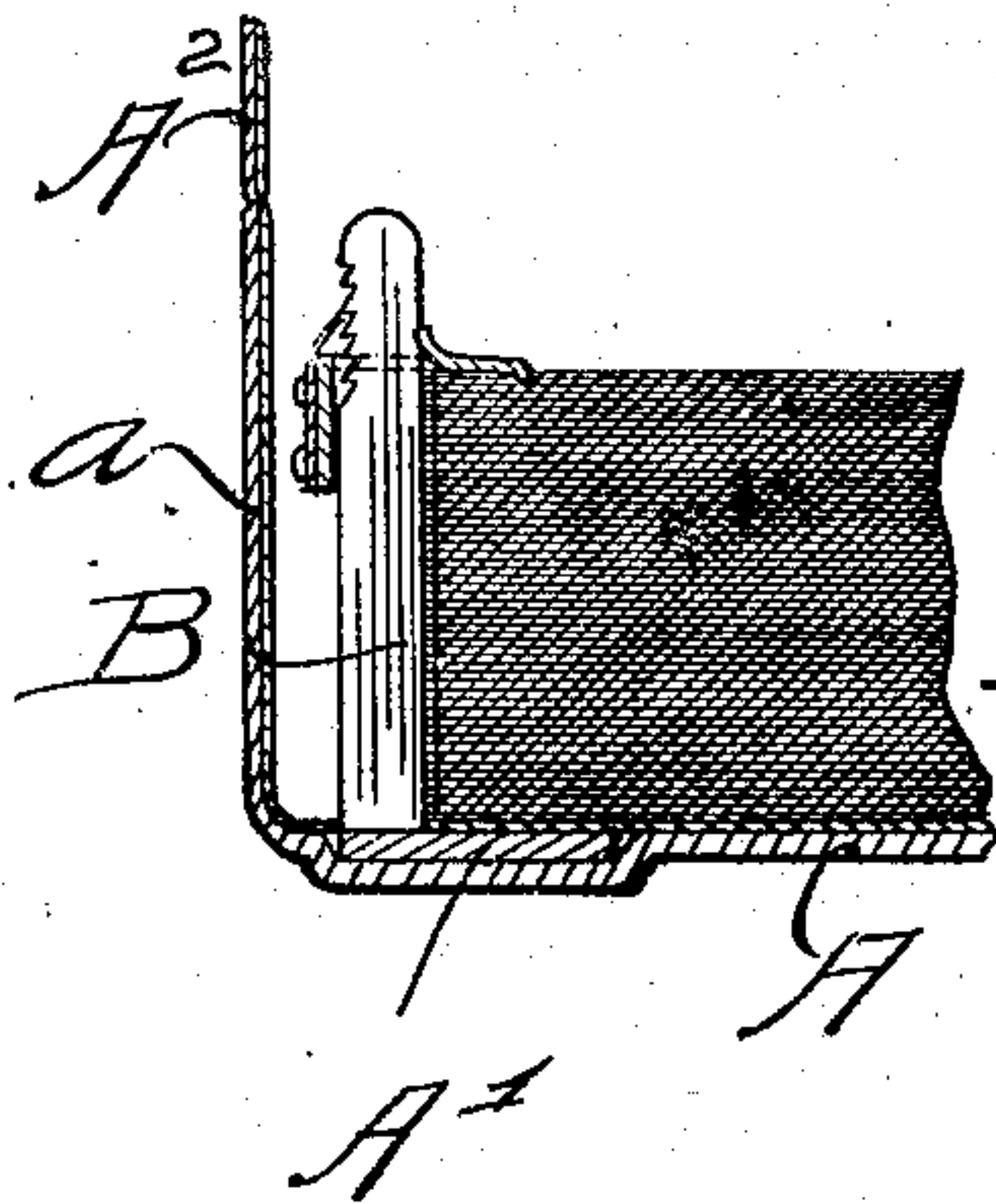


Fig. 3

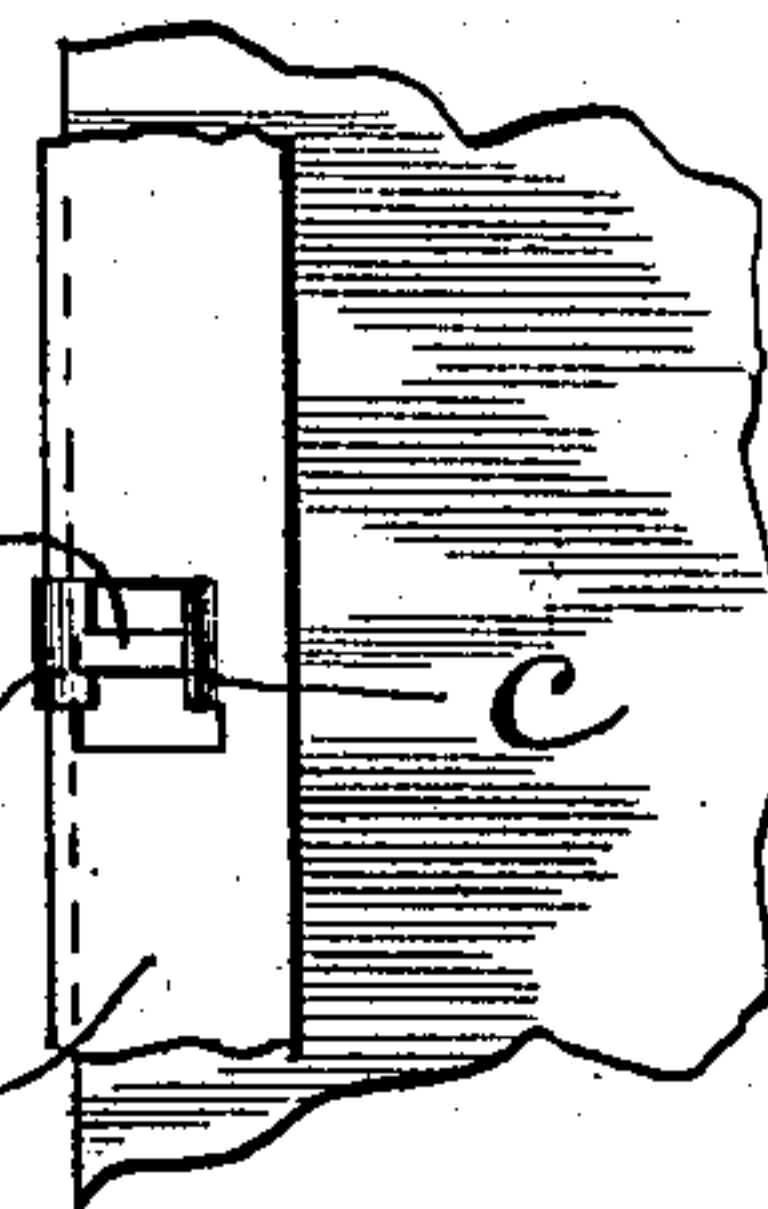
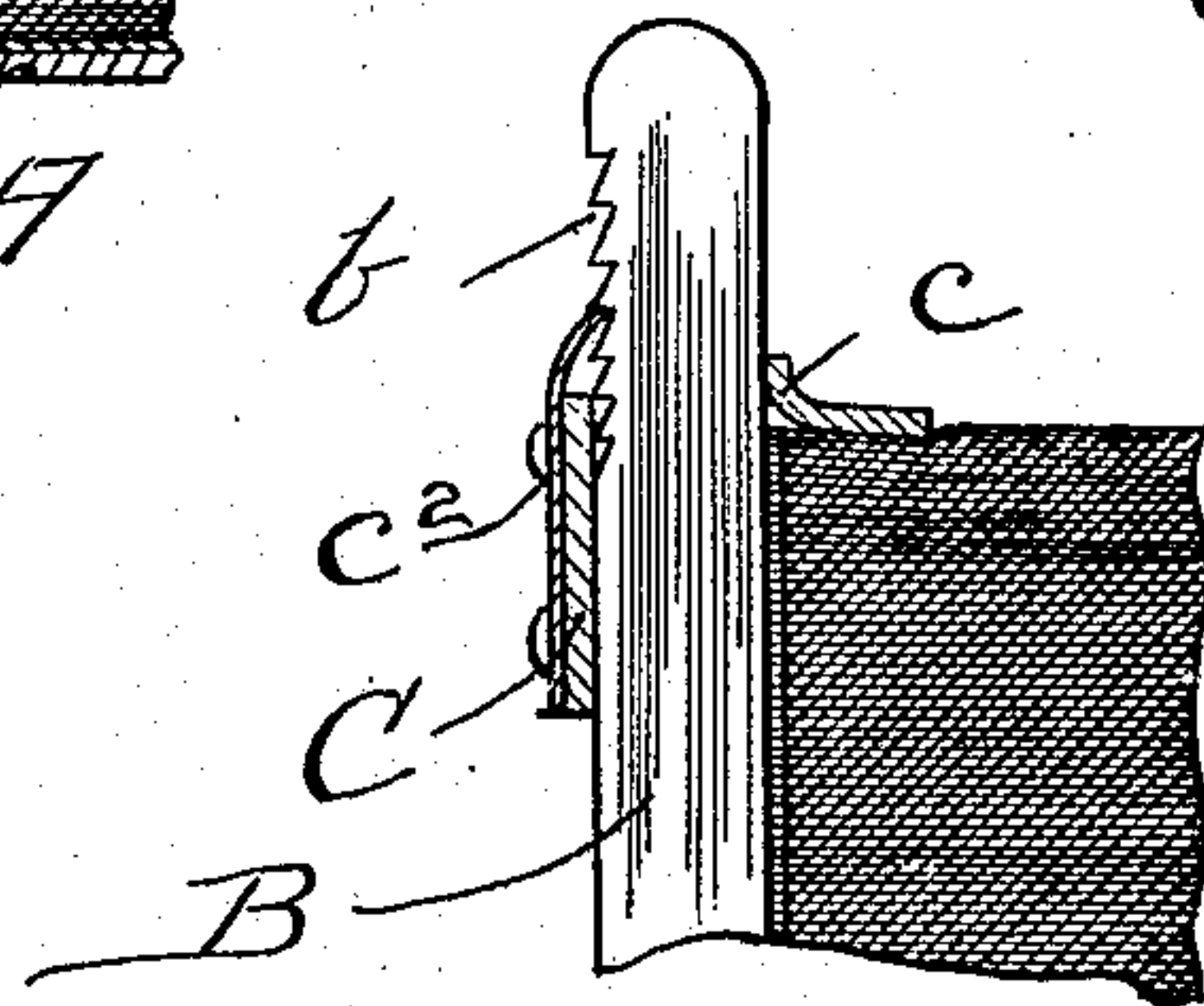


Fig. 4



Witnesses

J. H. Angell.  
 R. E. Kinnah.

Inventor

John W. Meaker Jr.  
 Charles E. Rice, Atty.



# UNITED STATES PATENT OFFICE.

JOHN W. MEAKER, JR., OF CHICAGO, ILLINOIS.

## PRESSURE-BINDER FOR LOOSE SHEETS.

No. 924,170.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed December 30, 1907. Serial No. 408,493.

*To all whom it may concern:*

Be it known that I, JOHN W. MEAKER, Jr., a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pressure-Binders for Loose Sheets; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to that class of loose leaf binders set forth in my co-pending application for patent for "loose leaf binder" executed of even date herewith and in which a clamping plate is firmly engaged upon impaling posts by downward pressure and is detached therefrom by movement at an angle with said posts.

The object of this invention is to provide a binder of the class described in which the leaves to be held in place are firmly engaged in position between parallel binding and clamping plates.

It is an important object of the invention to provide a construction by means of which a maximum portion of each leaf or sheet engaged in the binder may be exposed for use and also to afford a construction in which a leaf or leaves may be removed or inserted in the binder without necessitating the removal or displacement of any other leaf or leaves.

It is also an object of the invention to provide a construction by means of which leaves or pages may be secured which are not apertured or slotted along the binding margin as has heretofore been deemed necessary.

It is also an object of the invention to afford a construction in which though impaling posts are used, the sheets are retained in place by pressure from the front edge of the clamping plate more than by means of the impaling posts engaging in apertures or slots in the sheets.

It is finally an object of the invention to afford an exceedingly strong, simple and durable construction adapted for general use for any purpose for which loose leaf binders are adaptable and in which a clamping plate is maintained in its clamping relation in part by pressure exerted on the impaling posts below the engaging edge of the clamping plate.

The invention consists in the matters here-

inafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a perspective view of a device embodying my invention with the cover partly broken away. Fig. 2 is a transverse section thereof with one fold of the cover extended. Fig. 3 is a fragmentary top plan view thereof with the cover turned back and broken away. Fig. 4 is an enlarged fragmentary detail section illustrating the coöperation of the clamping plates and impaling posts in rigidly binding the sheets in place.

In said drawings: A, indicates the lower cover of the binder in which is secured at the rear margin a binding plate A', which may be of sheet steel or other suitable material. Rigidly engaged thereon either integrally or otherwise are the impaling posts B, which in the present instance are shown as two in number, though, of course, any desired number may be employed. Said impaling posts, as shown, are notched or serrated to afford downwardly directed teeth *b* on one or both sides thereof. Said impaling posts are of a length suitable to engage the number of sheets desired to be contained within the binder and may conveniently be sheared and struck up from the binding plate in which event said posts may be relatively thin longitudinally of the binding plate and the greater dimension thereof directed transversely of the binding plate, as shown in the present construction, though, said impaling posts may be of any desired form and engage in any suitable manner upon the binding plate. As shown, though not necessarily, the leaves are provided with shallow notches at the inner margin adapted to register with and receive the impaling posts therein. The clamping plate C in this instance comprises an angle bar having a relatively narrow web and flange and which may be turned or formed from comparatively light sheet metal. As shown, apertures are provided through the web closely adjacent the flange and at the forward side of the aperture the web is struck up to form a more or less resilient tongue *c*, adapted to engage on the forward side of the impaling posts. Conveniently, the flange opposite said tongue is sheared down for a part of the width of the flange and a portion of the metal from the web integral with said tongue *c'* is struck up to afford a strong integral leaf spring, the edge of



which projects inwardly to engage in the notches at the rear side of the impaling posts. The aperture in the clamping plate is extended, as shown in Fig. 3 to afford a wider portion slightly beyond the tongues  $c-c'$ , so that when the clamping plate is pushed longitudinally on the leaves, the impaling posts are disengaged thereby. Of course, if preferred, instead of forming the leaf spring  $c'$  integrally with the flange of the clamping plate, a separate leaf spring  $c^2$ , may be employed. For convenience of illustration both these constructions are shown in Fig. 1.

The operation is as follows: Having arranged the leaves in the desired relation and with the rear margins either bearing against the impaling posts or if notched, inserted thereon with the impaling posts in the notches, the clamping plate is adjusted on top of the impaling posts with the ends of said impaling posts projecting into the space between the tongue  $c$ , and spring  $c'$  or  $c^2$ . Downward pressure forces the front edge of said clamping plate into binding relation with said leaves, such pressure, of course, also springing the lower edge of the flange into firm engagement with the rear side of the impaling posts, and owing to the leverage afforded by the impaling posts engaging against the tongue  $c$ , above the plane of contact of the front edge of the clamping plate, said plate is canted or tilted forwardly adapting the front edge of the plate to compress the sheets to a greater extent than would otherwise be possible. The spring  $c'$  or  $c^2$ , engaging each beneath a tooth on the impaling posts firmly grip the impaling posts between the tongue  $c$  and said springs thus preventing said plates from lifting and binds the leaves in place with any degree of pressure capable of being exerted by the operator.

Preferably, the forward edge of the clamping plate is either turned downwardly to afford a clamping edge for positive engagement with the paper or the angle of the flange with said clamping edge is made slightly less than a right angle, as shown in Fig. 4, thereby exerting the greatest clamping pressure somewhat forwardly of the impaling posts and by concentrating the pressure along the line of the edge of said plate affording a somewhat better binding effect than might otherwise be secured. When it is desired to release the leaves it is only necessary to slide the clamping plate longitudinally the back of the binder until the impaling prongs or posts lie in the transverse slots which communicate with and form a part of the apertures beyond the tongue  $c$  and spring  $c'$ . The clamping plate can now be freely lifted, if desired.

Of course, if preferred, a cover may be attached to the clamping plate C, though in the construction shown the binding plate

only is rigidly attached to the cover and extending rearwardly therefrom is a back section  $a$  integrally connected with which is the upper cover  $A^2$ , and which may be thus folded around the back and down over the clamping plate and the otherwise exposed leaves.

Of course, inasmuch as pressure is exerted on the rear side of the impaling posts tending to incline or tilt the front edge of the clamping plate downwardly, a pressure effect is secured for the clamping plate not heretofore attained in any construction for a similar purpose. It is not necessary that said back flange on the clamping plate be of any considerable width to secure this result and in any event a narrow clamping plate when so braced and reinforced is capable of exerting much greater pressure in holding the leaves in place than has heretofore been possible with devices of a related nature.

I do not purpose limiting this application for patent otherwise than necessitated by the prior art, as I am aware that details of construction may be varied without departing from the principles of this invention.

I claim as my invention:

1. The combination with a binding plate of impaling posts rigidly secured thereon, a clamping plate apertured to receive the impaling posts, gripping means thereon to rigidly engage the impaling posts when in binding relation and an extension on said clamping plate adapted to bear on the rear side of the impaling posts below the clamping plate.
2. The combination with a binding plate of impaling posts rigidly secured thereon, a clamping plate apertured to receive the impaling posts, resilient gripping means thereon to rigidly engage the impaling posts when in binding relation and an extension on said clamping plate adapted to bear on the rear side of the impaling posts below the clamping plate.
3. The combination with a binding plate of impaling posts rigidly secured thereon, a clamping plate having slotted apertures therein to receive the impaling posts, gripping means thereon to rigidly engage the impaling posts when in binding relation and to be released by longitudinal movement of the clamping plate, and an extension on said clamping plate adapted to engage the rear side of the impaling posts below the clamping plate.
4. The combination with a binding plate of impaling posts rigidly secured thereon, a clamping plate having slotted apertures therein to receive the impaling posts, leaf springs projecting into the apertures to engage the impaling posts when in binding relation and permitting release of the clamping plate only by sliding the same to bring said posts into the slots and a brace on the rear edge of said clamping plate adapted to en-



gage the rear side of the impaling posts below the clamping plate to tip said plate forwardly.

5. In a device of the class described a binding plate, impaling posts rigidly engaged thereon, a clamping plate comprising a clamping member parallel to the binding plate, a flange extending downwardly along the impaling posts, apertures in said clamping plate to receive the impaling posts there-through and resilient members adapted to grip the protruding ends of the impaling posts.

6. In a device of the class described a binding plate, impaling posts rigidly engaged thereon, a clamping plate comprising a metallic strip formed longitudinally to afford an apertured clamping member parallel to the binding plate, a flange extending downwardly along the impaling posts and leaf springs adapted to grip the protruding end of the impaling posts when in binding relation, said clamping plate adjacent the apertures therein being slotted to receive the impaling posts when in release position.

7. In a device of the class described impaling posts, a clamping plate adapted to receive the same therethrough and a flange on the clamping plate adapted to bear on the impaling posts.

8. In a device of the class described a binding plate, impaling posts rigidly engaged thereon, a clamping plate adapted to engage thereon and comprising a clamping member parallel to the binding plate, a flange integral therewith and extending downwardly along the impaling posts and acting to incline the edge of the clamping member into binding engagement with the leaves to be bound thereby.

9. In a device of the class described a binding plate, integral impaling posts thereon, a clamping plate comprising a metallic strip formed longitudinally to afford a clamping member parallel to the binding plate, a flange extending downwardly along and bearing on the impaling posts, said clamping plate having slotted apertures to receive the impaling posts therethrough and resilient members adapted to grip the protruding end of the impaling posts when pressed thereon and to release the impaling posts when the clamping plate is moved longitudinally.

10. In a device of the class described a binding plate, impaling posts secured thereto, a clamping plate adapted to receive and engage said impaling posts having its front edge inclined to exert binding pressure on sheets engaged between the plates and means for tilting the clamping plate forwardly.

11. In a device of the class described a binding plate, a clamping plate having its forward edge angularly directed to exert pressure on sheets engaged between the

plates, means for connecting the plates and means integral with the clamping plate adapted to engage part of the connecting means for tilting the clamping plate adapting the front edge to exert pressure on the sheets.

12. In a device of the class described coacting binding and clamping plates, one of said plates provided with an edge adapted to compress sheets and coacting means, part rigidly secured to one plate and part integral with the other plate for connecting the plates.

13. In a device of the class described a binding plate, a clamping plate, impaling posts secured to one of the plates provided with downwardly directed ratchet teeth, means on the other plate adapted to automatically lock in said teeth as the plates are compressed and one of said plates movable longitudinally of the other to release the locking mechanism from the teeth of the posts.

14. In a binder a binding plate, a clamping plate having its front edge formed to firmly compress the sheets between the same and binding plate, means for inclining the clamping plate adapting its front edge to exert great pressure to compress said sheets and means for locking said binding and clamping plates in rigid relation for any adjustment thereof.

15. In a binder a binding plate, a clamping plate having its front edge formed to firmly compress the sheets between the same and binding plate, posts secured to the binding plate, a downwardly directed flange integral with the clamping plate adapted to limit the rearward movement of the sheets and gripping means secured to the flange adapted to engage the posts.

16. In a device of the class described a clamping plate provided with apertures and having the metal on one side of the apertures struck up, a binding plate, toothed impaling posts secured thereto adapted to engage in the apertures and bear against the struck up metal and springs adapted to engage the teeth of the impaling posts.

17. In a device of the class described a binding plate, impaling posts secured thereto, a clamping plate adapted to receive the impaling posts, means integral with the clamping plates adapted to engage the posts on one side and spring pawls adapted to engage the posts oppositely therefrom to secure the clamping plate in any position.

18. In a device of the class described a binding plate, posts rigidly secured thereto provided with teeth, a clamping plate, a downwardly directed flange integral therewith, a leaf spring rigidly secured to the flange adapted to engage the teeth and means bearing against the post opposite from the spring whereby the edge of the clamping plate exerts the greatest pressure on the leaves.

19. In a device of the class described a binding plate, impaling posts secured there-



to, a clamping plate provided with apertures  
to receive the impaling posts when the binder  
is locked, said clamping plate provided with  
slots to receive the impaling posts when un-  
5 locking the binder, a downwardly directed  
flange integral with the rear of the clamping  
plate and means rigidly secured to the flange  
extending partly over the apertures in the  
clamping plate for engaging the impaling  
10 posts.

20. In a device of the class described a  
binding plate, impaling posts secured thereto  
each having teeth, a clamping plate provided

with a binding edge and elongated slots to  
receive the impaling posts and means secured 15  
to the clamping plates of less width than the  
slot and extending over corresponding ends  
of the slots for engaging the impaling posts.

In testimony whereof I have hereunto sub- 20  
scribed my name in the presence of two sub-  
scribing witnesses.

JOHN W. MEAKER, Jr.

Witnesses:

J. W. ANGELL,  
LAWRENCE RUBSTEIN.